

LANL MST Office Building

Preliminary Evaluation based on the LEED Rating System, version 2.0

Y	?	N	LEED Criteria	ACTIONS/COMMENTS
SUSTAINING SITES				
X			Prerequisite. Meet local soil erosion standards with a locally approved sedimentation and erosion control plan, which would meet the following objectives. Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter.	
1			Site/Water Credit 1: Site Selection Do not locate facility: 1. On prime agricultural land, 2. On land where elevation is lower than 5' above 100 year flood, 3. Land that provides habitat for species on the Federal/State Threatened or Endangered list, 4. Within 100 feet of any wetland	
		1	Site/Water Credit 2: Urban Redevelopment Increase localized density to conform to existing or desired density goals by utilizing sites that are located within an existing minimum development density of 60,000 square feet per acre (2 story downtown development).	Not applicable to LANL sites
		1	Site/Water Credit 3: Brownfield development Develop on a site classified as a Brownfield and provide remediation as required by EPA's Brownfield Redevelopment program requirements.	Not applicable to MST site
	1		Site/Water Credit 4: Alternative Transportation Locate building within ½ mile of a commuter rail, light rail or subway station or ¼ mile of 2 or more bus lines.	Only one bus line is available. Is this sufficient to meet the credit?
1			Provide suitable means for securing bicycles, with convenient changing/shower facilities for use by cyclists, for 5% or more of building occupants	
		1	Install alternative-fuel refueling station(s) for 3% of the total vehicle parking capacity of the site. Liquid or gaseous fueling facilities must be separately ventilated or located outdoors.	
1			Size parking capacity not to exceed minimum local zoning requirements AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants. OR, add no new parking for rehabilitation projects AND provide preferred parking for carpools or vanpools capable of serving 5% of the building occupants.	
		1	Site/Water Credit 5: Reduced Site Disturbance Limit all construction activities, including site access, to the area within the construction envelope, which is defined as: a) 40 feet beyond the building perimeter b) 5 feet beyond primary roadway curbs, primary walkways, and utility trenches c) 25 feet beyond pervious paving areas that require additional staging areas in order to limit compaction in the paved area; OR, on previously developed sites, restore a minimum of 50% of the remaining open area by planting native or adapted vegetation.	Standard construction practices would have to be changed.
	1		Reduce the development footprint (including building, utilities, access and parking) to exceed the local zoning's open space requirements for the site by 25%	No local zoning requirements. Don't know how to interpret this credit.
		1	Site/Water Credit 6: Storm Water Management Implement a stormwater management plan that results in: No net increase in the rate or quantity of stormwater runoff from existing to developed conditions; OR, if existing imperviousness is greater than 50%, implement a stormwater management plan that results in a 25% decrease in the rate and quantity of stormwater runoff.	

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		1	Treatment systems designed to remove 80% of the average annual post development total suspended solids (TSS), and 40% of the average annual post development total phosphorous (TP), by implementing Best Management Practices (BMPs) outlined in EPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA840-B-92-002) 1/93.	
		1	Site/Water Credit 7: Landscape & Exterior Design to Reduce Heat Islands Provide shade (within 5 years) on at least 30% of non-roof impervious surface on the site, including parking lots, walkways, plazas, etc., OR, use light-colored/high-albedo materials (reflectance of at least 0.3) for 30% of the site's non-roof impervious surfaces, OR place a minimum of 50% of parking space under-ground OR use open-grid pavement system (net impervious area of less than 50%) for a minimum of 50% of the parking lot area.	
1			ENERGY STAR Roof-compliant, high-reflectance AND low emissivity roofing (initial reflectance of at least .65 and three-year-aged reflectance of at least .5 when tested in accordance with ASTM E903 AND minimum thermal emittance of 0.75 when tested in accordance with ASTM E408) for a minimum of 75% of the roof surface; OR, install a "green" (vegetated) roof for at least 50% of the roof area.	LANL roof already meets these requirements
1			Site/Water Credit 8: Light Pollution Reduction Do not exceed Illuminating Engineering Society of North America (IESNA) foot-candle level requirements as stated in the Recommended Practice Manual: Lighting for Exterior Environments, AND design interior and exterior lighting such that zero direct-beam illumination leaves the building site.	Already comply with New Mexico Night Skies Act
5	3	6	SUBTOTAL FOR SUSTAINABLE SITES	

WATER EFFICIENCY				
1			Water Credit 1: Water Efficient Landscaping Use high efficiency irrigation technology, OR, use captured rain or recycled site water, to reduce potable water consumption for irrigation by 50% over conventional means.	Will install landscaping without a permanent irrigation system
1			Use only captured rain or recycled site water for an additional 50% reduction (100% total reduction) of potable water for site irrigation needs, OR, do not install permanent landscape irrigation systems.	
		1	Water Credit 2: Innovative Wastewater Technologies Reduce the use of municipally treated water for sewage conveyance by at least 50% of the regional average use; OR treat 100% of wastewater on site to stage-3 standards.	
		1	Water Credit 3: Water Use Reduction Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting Energy Policy Act of 1992 fixture performance requirements.	This is easily achievable with waterless urinals and/or low flow faucets.
		1	Exceed the potable water use reduction by an additional 10% (30% total efficiency increase).	
2	1	2	SUBTOTAL FOR WATER EFFICIENCY	

ENERGY AND ATMOSPHERE				
X			Prerequisite 1: Fundamental Building Systems Commissioning Implement all of the following fundamental best practice commissioning procedures. •Engage a commissioning authority. •Document design intent and the basis of design for the building and systems. •Include commissioning requirements in the construction documents. •Develop and utilize a commissioning plan. •Verify installation, functional performance, training and documentation. •Complete a commissioning report.	

Y	?	N	LEED Criteria					ACTIONS/COMMENTS
X			Prerequisite 2: Minimum Energy Performance Design to meet building energy efficiency and performance as required by ASHRAE 90.1-1999 or the local energy code, which ever is the more stringent. Analyze expected baseline building performance using the System/Component Method.					
X			Prerequisite 3: CFC Reduction in HVAC&R Equipment Zero use of CFC-based refrigerants in new building HVAC&R systems. When reusing existing HVAC equipment, complete a comprehensive CFC phase-out conversion.					
			Credit 1: Optimize Energy Performance Exceed the building requirements of ASHRAE / IES Standard 90.1-1999 by:					LANL standard GPP building already exceeds ASHRAE 90.1-1999. The gourp felt that 30% is achievable.
			LEVEL	NEW	EXISTING			
2			1	20%	10%			
2			2	30%	20%			
	2		3	40%	30%			
	2		4	50%	40%			
	2		5	60%	50%			
			Credit 2: Renewable Energy Supply a net fraction of the building's total energy load (as expressed as a fraction of annual energy cost) through the use of on-site renewable energy systems.					
			LEVEL	FRACTION				
	1		1	5%				
	1		2	10%				
	1		3	20%				
			Credit 3: Additional Commissioning In addition to the Fundamental Building Commissioning prerequisite, implement the following: 1) Conduct a focused review of design prior to the construction documents phase. 2) Conduct a focused review of the construction documents when close to completion. 3) Conduct a selective review of contractor submittals of commissioned equipment. 4) Develop a system and energy management manual. Develop a re-commissioning management manual. 5) Have a contract in place for a near-warranty end or post occupancy review 1 Items 1,2, and 3 must be performed by someone other than the design engineer.					
1			Credit 4: Elimination of HCFC's and Halons Install building level HVAC and refrigeration equipment and fire suppression systems that do not contain HCFC's or Halons.					Will specify chillers with R134a or 407C

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		1	Credit 5: Measurement and Verification Comply with the installed equipment requirements for continuous metering as stated in Option B: Methods by Technology of the US DOE's International Performance Measurement and Verification Protocol (IPMVP) for the following: <ul style="list-style-type: none"> •Lighting systems and controls. •Constant and variable motor loads. •Variable frequency drive (VFD) operation. •Chiller efficiency at variable loads (kW/ton). •Cooling load. •Air and water economizer and heat recovery cycles. •Air distribution static pressures and ventilation air volumes. •Boiler efficiencies. •Building specific process energy efficiency systems and equipment. •Indoor water risers and outdoor watering systems. 	
		1	Credit 6: Green Power Engage in a two-year contract to purchase power generated from renewable sources that meets the Center for Resource Solutions (CRS) Green-E requirements.	Green power is not available
5	0	12	SUBTOTAL OF ENERGY AND ATMOSPHERE	

MATERIALS AND RESOURCES				
X			Prerequisite 1 - Storage & Collection of Recyclables Provide an easily accessible area that serves the entire building dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, glass, plastics, and metals.	
		1	Materials Credit 1 - Building Reuse Reuse large portions of existing structures during renovation or redevelopment projects. Maintain at least 75% of existing building shell (exterior skin, excluding window assemblies and framing).	Does not apply to MST
		1	Maintain 100% of shell	
		1	Maintain 100% of shell and 50% of non-shell	
1			Materials Credit 2 - Construction Waste Management Develop and implement a waste management plan, quantifying material diversion by weight. Recycle and/or salvage at least 50% (by weight) of construction, demolition, and land clearing waste.	LANL is already doing this. Need to extend to contractors through contract language.
1			Recycle and/or salvage an additional 25% (75% total by weight) of the construction, demolition, and land clearing debris.	
1			Materials Credit 3 - Resource Reuse Specify salvaged or refurbished materials for 5% of total building materials	
		1	Specify salvaged or refurbished materials for 10% of total building materials	
1			Materials Credit 4 - Recycled Content Specify a minimum of 25% of total building materials that contain in aggregate a minimum weighted average of 20% post-consumer recycled content material, OR, a minimum weighted average of 40% post-industrial recycled content material.	Achievable and required by Executive Order 13101
	1		Specify an additional 25% (50% total) of total building materials that contain in aggregate, a minimum of 20% post-consumer recycled content material, OR, a minimum 40% post-industrial recycled content material.	
1			Materials Credit 5 – Local/Regional Materials Specify a minimum of 20% of total building materials that are manufactured regionally within a radius of 500 miles.	This is consistent with LANL directive for business development in northern New Mexico.

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		1	Of these regionally manufactured materials, specify a minimum of 50% that are extracted, harvested, or recovered within 500 miles.	
		1	Materials Credit 6 – Renewable & Rapidly Renewable Materials Specify rapidly renewable building materials for 5% of total building materials.	
1			Materials Credit 7 – Certified Wood Use a minimum of 50% of wood-based materials certified in accordance with the Forest Stewardship Council guidelines for wood building components including, but not limited to framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete form work and pedestrian barriers.	
6	1	6	SUBTOTAL OF MATERIALS AND RESOURCES	

INDOOR ENVIRONMENTAL QUALITY (IEQ)				
X			IEQ Prerequisite 1 - Minimum Indoor Air Quality (IAQ) Performance Meet the minimum requirements of voluntary consensus standard ASHRAE 62-1999, Ventilation for Acceptable Indoor Air Quality and approved Addenda.	
X			IEQ Prerequisite 2 – Environmental Tobacco Smoke (ETS) Control Zero exposure of nonsmokers to ETS by prohibition of smoking in the building, OR, by providing a designated smoking room designed to effectively contain, capture and remove ETS from the building. At a minimum, the smoking room shall be directly exhausted to the outdoors with no recirculation of ETS-containing air to the non-smoking area of the building, enclosed with impermeable slab to slab partitions and operated at a negative pressure compared with the surrounding spaces of at least 7 Pa (0.03 inches of water gauge). Performance of smoking rooms shall be verified using tracer gas testing methods as described in ASHRAE Standard 129-1997. Acceptable exposure in non-smoking areas is defined as less than 1% of the tracer gas concentration in the smoking room detectable in the adjoining non-smoking areas. Smoking room testing as described in the Reference Guide is required in the contract documents and critical smoking facility systems testing results must be included in the building commissioning plan and report or as a separate document.	
1			IEQ Credit 1 - Carbon Dioxide (CO2) Monitoring Control Install a permanent carbon dioxide (CO2) monitoring system that provides feedback on space ventilation performance in a form that affords operational adjustments AND specify initial operational set point parameters that maintain indoor carbon dioxide levels no higher than outdoor levels by more than 530 parts per million at any time.	Direct Digital Controls (DDC) are already required. Incorporating Co2 monitoring and feedback should not be difficult.
1			IEQ Credit 2 - Increase Ventilation Effectiveness For mechanically ventilated buildings, design ventilation systems that result in an air change effectiveness (E) greater than or equal to 0.9 as determined by ASHRAE 129-1997. For naturally ventilated spaces demonstrate a distribution and laminar flow pattern that involves not less than 90% of the room or zone area in the direction of air flow for at least 95% of hours of occupancy.	
			IEQ Credit 3 - Construction IAQ Management Plan Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building, to control and reduce exposures to construction-related dust, objectionable odors, and potentially harmful sources of contamination, as follows:	
1			During construction, meet or exceed minimum requirements of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995. OR Demonstrate through air sampling prior to installation of carpets and prior to occupancy Total VOC and Total Particulate concentrations less than 0.5 mg/m3 (1 point)	

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		1	Prior to occupancy and after construction ends, conduct a building flushout for a minimum of two weeks with all new filtration media at 100% outdoor air. Replace all filtration media immediately prior to occupancy. Filtration media shall have a minimum MERV of 13 as determined by ASHRAE 52.2-1999; OR Conduct microbial contamination sampling (bulk, wipe or air) and mitigation as necessary prior to occupancy of target areas where moisture infiltration has occurred during construction.	Schedule for occupancy may make this difficult to achieve
			IEQ Credit 4 - Select Low-Emitting Materials Meet or exceed VOC limits for adhesives, sealants, paints, composite wood products, and carpet systems as follows:	
1			Adhesives must meet or exceed the VOC limits of South Coast Air Quality Management District Rule #1168 by, AND all sealants used as a filler must meet or exceed Bay Area Air Resources Board Reg. 8, Rule 51.	
1			Paints and coatings must meet or exceed the VOC and chemical component limits of Green Seal requirements	
1			Carpet systems must meet or exceed the Carpet and Rug Institute Green Label Indoor Air Quality Test Program	
	1		Composite wood or agrifiber products must contain no added urea-formaldehyde resins.	
1			IEQ Credit 5 - Indoor Chemical Pollutant Source Control Design to minimize cross-contamination of regularly occupied areas by chemical pollutants: Employ permanent entryway systems (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways, AND provide areas with structural deck to deck partitions with separate outside exhausting, no air recirculation and negative pressure where chemical use occurs (including housekeeping areas and copying/print rooms), AND provide drains plumbed for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.	
		1	IEQ Credit 6 - Controllability of Systems Provide a minimum of one operable window and one lighting control zone per 200 sf for all occupied areas within 15 feet of the perimeter wall.	Operable windows are not specified for LANL buildings
	1		Provide controls for each individual for airflow, temperature, and lighting for 50% of the non perimeter, regularly occupied areas	Thermostats are typically provided for small numbers of offices (4-10), but not individually.
1			IEQ Credit 7 - Thermal Comfort Comply with ASHRAE Standard 55-1992, Addenda 1995 for thermal comfort standards including humidity control within established ranges per climate zone.	
1			Install a permanent temperature and humidity monitoring system configured to provide operators control over thermal comfort performance and effectiveness of humidification and/or dehumidification systems in the building.	
1			IEQ Credit 8 - Lighting and Views Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetration) in 75% of all space occupied for critical visual tasks, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas. Exceptions include those spaces where tasks would be hindered by the use of daylight or where accomplishing the specific tasks within a space would be enhanced by the direct penetration of sunlight.	
		1	Direct line of sight to vision glazing while seated from 90% of all regularly occupied spaces, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas.	
10	3	2	SUBTOTAL OF IEQ	

DESIGN PROCESS AND INNOVATION POINTS

1			LEED Accredited Professional At least one principal participant of the project team that has successfully completed the LEED exam.	
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Y	?	N	LEED Criteria	ACTIONS/COMMENTS
1			Innovation Credit - Up to four available.	Give trailers to contractor in value for clearing utilities.
2	0		SUBTOTAL OF DESIGN PROCESS & INNOVATION	
30	8	28	TOTAL LEED SCORE	

Platinum = 52+ points
Gold = 39-51 points
Silver = 33-38 points
Certified = 26-32 points